

CLAIMS

What is claimed is:

1. An optical semiconductor module comprising:
light emitting means for emitting signal light;
optical transmitting means for transmitting said signal light;
light monitoring means for receiving forward light emitted from said light emitting means; and
support means for supporting said light emitting means and said optical transmitting means.
2. The optical semiconductor module as claimed in claim 1, wherein said light monitoring means is arranged above said optical transmitting means such that a light receiving surface faces downward with respect to said support means.
3. The optical semiconductor module as claimed in claim 1, wherein said forward light is a portion of leakage light that is not coupled to said optical transmitting means.
4. The optical semiconductor module as claimed in claim 3, wherein said optical transmitting means is an optical waveguide.
5. The optical semiconductor module as claimed in claim 4, further

comprising reflecting means disposed between said optical waveguide and said support means for reflecting leakage light of said signal light that is not coupled to said optical waveguide.

6. The optical semiconductor module as claimed in claim 5, wherein said light monitoring means receives leakage light reflected by said reflecting means.

7. The optical semiconductor module as claimed in claim 3, wherein said optical transmitting means is an optical fiber.

8. The optical semiconductor module as claimed in claim 7, further comprising positioning means for positioning said optical fiber so that said signal light emitted from said light emitting means can be optically coupled to said optical fiber.

9. The optical semiconductor module as claimed in claim 7, wherein said light monitoring means is disposed so that it cannot contact said optical fiber.

10. The optical semiconductor module as claimed in claim 1, wherein a current generated by said light monitoring means is used to control said signal light output from said light emitting means.

11. An optical semiconductor module comprising:

light emitting means for emitting signal light;

first guiding means for guiding said signal light;

light monitoring means for receiving forward light emitted from said light emitting means;

second guiding means for guiding signal light input to said optical semiconductor module;

coupling means for coupling light guided through said first guiding means and light guided through said second guiding means; and

support means for supporting said light emitting means.

12. The optical semiconductor module as claimed in claim 11, further comprising light receiving means for receiving signal light guided by said second guiding means.

13. The optical semiconductor module as claimed in claim 12, wherein said light receiving means is provided on said support means.

14. The optical semiconductor module as claimed in claim 12, wherein said light monitoring means is arranged above said first guiding means such that a light receiving surface faces downward with respect to said support means.

15. The optical semiconductor module as claimed in claim 12, wherein said forward light is a portion of leakage light that is not coupled to said first guiding means.

16. The optical semiconductor module as claimed in claim 12, wherein said first guiding means is a first waveguide and said second guiding means is a second waveguide.

17. The optical semiconductor module as claimed in claim 11, wherein a current generated by said light monitoring means is used to control said signal light output from said light emitting means.

18. An optical semiconductor module comprising:
light emitting means for emitting first signal light;
first guiding means for guiding said first signal light;
light monitoring means for receiving forward light emitted from said first light emitting means;
second guiding means for guiding a second signal light input into said optical semiconductor module;
filtering means for allowing transmission of a predetermined signal light;
and
support means for supporting said light emitting means.

19. The optical semiconductor module as claimed in claim 18, further comprising:

third guiding means for guiding signal light allowed transmission by said filtering means; and

light receiving means for receiving signal light guided through said third guiding means.

20. The optical semiconductor module as claimed in claim 19, wherein said light receiving means is provided on said support means.

21. The optical semiconductor module as claimed in claim 18, wherein said filtering means reflects said first signal light and allows transmission of the second signal light.

22. The optical semiconductor module as claimed in claim 18, wherein said first guiding means is a first waveguide, said second guiding means is a second waveguide and third guiding means is a third waveguide.

23. The optical semiconductor module as claimed in claim 18, wherein said light monitoring means is arranged above said first guiding means so that a light receiving surface faces downward with respect to said support means.

24. The optical semiconductor module as claimed in claim 18, wherein said forward light is a portion of leakage light that is not coupled to said first guiding means.

25. The optical semiconductor module as claimed in claim 18, wherein a current generated by said light monitoring means is used to control said first signal light output from said light emitting means.

26. An optical semiconductor module comprising:
a light emitting element that emits signal light;
an optical waveguide that transmits said signal light;
a light monitor that receives forward light emitted from said light emitting element; and
a substrate for supporting said light monitor and said optical waveguide.

27. The optical semiconductor module as claimed in claim 26, wherein said light monitor is arranged above said optical waveguide so that a light receiving surface faces downward with respect to said substrate.

28. The optical semiconductor module as claimed in claim 26, wherein said forward light is a portion of leakage light that is not coupled to said optical waveguide.

29. The optical semiconductor module as claimed in claim 28, further comprising a reflection film disposed between said optical waveguide and said substrate for reflecting leakage light of said signal light that is not coupled to said optical waveguide.

30. The optical semiconductor module as claimed in claim 29, wherein said light monitor receives leakage light reflected by said reflection film.

31. The optical semiconductor module as claimed in claim 26, wherein a current generated by said light monitor is used to control the signal light output of said light emitting element.

32. An optical semiconductor module comprising:
a light emitting element that emits signal light;
an optical fiber that transmits said signal light;
a light monitor that receives forward light emitted from said light emitting element; and
a substrate for supporting said light emitting element and said optical fiber.

33. The optical semiconductor module as claimed in claim 32, wherein said light monitor is arranged above said optical fiber such that a light receiving surface faces downward with respect to said substrate.

34. The optical semiconductor module as claimed in claim 32, wherein said forward light is a portion of leakage light that is not coupled to said optical fiber.

35. The optical semiconductor module as claimed in claim 34, further comprising positioning grooves that position said optical fiber so that said signal light emitted from said light emitting element can be optically coupled to said optical fiber.

36. The optical semiconductor module as claimed in claim 34, wherein said light monitor is provided so that it cannot contact said optical fiber.

37. The optical semiconductor module as claimed in claim 32, wherein a current generated by said light monitor is used to control said signal light output from said light emitting element.

38. An optical semiconductor module comprising:
a light emitting element that emits signal light;
a first waveguide that guides said signal light;
a light monitor that receives forward light emitted from said light emitting element;
a second waveguide that guides signal light input to said optical

semiconductor module;

a branch waveguide that couples light guided through said first waveguide and light guided through said second waveguide; and

a substrate for supporting said light emitting element.

39. The optical semiconductor module as claimed in claim 38, further comprising a light receiving element that receives signal light guided by said second waveguide.

40. The optical semiconductor module as claimed in claim 39, wherein said a light receiving element is provided on said substrate.

41. The optical semiconductor module as claimed in claim 39, wherein said light monitor is arranged above said first waveguide such that a light receiving surface faces downward with respect to said substrate.

42. The optical semiconductor module as claimed in claim 38, wherein said forward light is a portion of leakage light that is not coupled to said first waveguide.

43. The optical semiconductor module as claimed in claim 38, wherein a current generated by said light monitor is used to control said signal light output from said light emitting element.

44. An optical semiconductor module comprising:
a light emitting element that emits a first signal light;
a first waveguide that guides said first signal light;
a light monitor that receives forward light emitted from said light emitting element;
a second waveguide that guides a second signal light input into said optical semiconductor module;
a filter that allows transmission of a predetermined signal light; and
a substrate for supporting said light emitting element.

45. The optical semiconductor module as claimed in claim 44, further comprising:
a third waveguide that guides signal light allowed transmission by said filter; and
a light receiving element that receives signal light guided through said third waveguide.

46. The optical semiconductor module as claimed in claim 45, wherein said light receiving element is provided on said substrate.

47. The optical semiconductor module as claimed in claim 44, wherein said filter reflects said first signal light and allows transmission of the

second signal light.

48. The optical semiconductor module as claimed in claim 44, wherein said light monitor is arranged above said first waveguide so that a light receiving surface faces downward with respect to said substrate.

49. The optical semiconductor module as claimed in claim 44, wherein said forward light is a portion of leakage light that is not coupled to said first waveguide.

50. The optical semiconductor module as claimed in claim 44, wherein a current generated by said light monitor is used to control said signal light output from said light emitting element.